

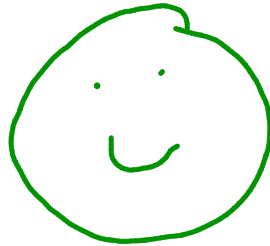
$$3^2$$



## Perfect Squares and Square Roots

$$\begin{array}{|c|c|} \hline 0 & 0 \\ \hline 0 & 0 \\ \hline \end{array}$$

$$2 \times 2 = 4$$



$$\begin{array}{|c|c|c|} \hline 0 & 0 & 0 \\ \hline 0 & 0 & 0 \\ \hline \end{array} \quad 3 \times 3 = 9$$

$$\begin{array}{|c|c|c|} \hline 0 & 0 & 0 \\ \hline 0 & 0 & 0 \\ \hline \end{array}$$

$$2 \times 3$$

Not a square



$$\begin{array}{ll}
 2 \times 2 = 4 & \therefore \sqrt{4} = 2 \\
 3 \times 3 = 9 & \therefore \sqrt{9} = 3 \\
 4 \times 4 = 16 & \therefore \sqrt{16} = 4
 \end{array}$$

what number,  
times itself,  
equals the number  
in the question!

$$\sqrt{49} = 7$$

$$\sqrt{81} = 9$$

$$\sqrt{100} = 10$$

$$\sqrt{7225} = 85$$

$\sqrt{\quad}$  = square root

When doing Order of Operations,  
treat anything under  $\sqrt{\quad}$   
as if it is in brackets.

$$7 + \sqrt{20+5} = 7 + \sqrt{25}$$

$$= 7 + 5$$

$$= 12$$

treat like  
brackets until  
one # underneath...

B  
→ E  
what  
number times  
# self  
is 25  
5

$$8^2 - \sqrt{13^2 - 5^2} = 8^2 - \sqrt{169 - 25}$$

$$= 8^2 - \sqrt{144}$$

$$= 8^2 - \cancel{144} 12$$

$$= 64 - 12$$

$$= 52$$

$$\cancel{13^2 = 13 \times 13}$$

$$\cancel{= 169}$$

Homework:

a)  $\sqrt{13^2 - 12^2} =$

😊 b)  $\sqrt{12^2} =$

c)  $\sqrt{(7+6)^2 - (6+6)^2} =$

d)  $[2 \times (3+7)]^2 \div \sqrt{13^2 - 12^2}$

Brackets  
then Exponents  
Then Division or Multiplication  
Then Addition or Subtraction